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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/711,620

09/29/2004

Chun-Chung Lu

13719-US-PA

5619

31561 7590 04/03/2007
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER

SANTIAGO, MARICELI

ART UNIT

PAPER NUMBER

2879

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/711,620	Applicant(s) LU ET AL.	
	Examiner Mariceli Santiago	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/29/2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Amendment, filed on January 2, 2007, has been entered and acknowledged by the Examiner.

Cancellation of claim 11 has been entered.

Claims 1-10 and 12-18 are pending in the instant application.

Examiner's note

The following rejection is partially based on foreign references to Furukawa et al. (JP 2000-040586 A) and Mishima et al. (JP 2001-06871). A copy of a machine translation of the applied reference is hereby provided, however, an official English translation of the reference has been requested and would be submitted as soon as it is available to the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-7, 13, 14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Furukawa et al. (2000-040586 A).

Regarding claim 1, Furukawa discloses an organic electro-luminescent display panel (Fig. 1), comprising a substrate (1) having a front surface and a back surface, an organic electroluminescent device layer (12), disposed on the front surface of the substrate, a first barrier layer (3), disposed over the organic electro-luminescent device layer, wherein a gap is

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formed between the first barrier layer and the organic electro-luminescent device layer (crevice in U-shaped barrier layer, ¶[0045]), a first sealant (4), disposed between the substrate and the first barrier layer so as to encapsulate the organic electro-luminescent device layer between the substrate and the first barrier layer, and a second barrier layer (6), disposed over the substrate covering the first barrier layer, the whole first sealant and the front surface of the substrate and the organic electro-luminescent device layer.

Regarding claims 2 and 3, Furukawa discloses an organic electro-luminescent display panel wherein the first barrier layer is an organic layer, of at least acrylic resin or vinyl chloride resin (¶[0043]).

Regarding claims 5-7, Furukawa discloses an organic electro-luminescent display panel wherein the first barrier layer is an inorganic layer, of at least an oxide (alumina or silica, ¶[0043]).

Regarding claim 13, Furukawa discloses an organic electro-luminescent display panel wherein the organic electro-luminescent device layer is an active matrix organic electro-luminescent device layer or a passive organic electro-luminescent device layer.

Regarding claim 14, Furukawa discloses a method of fabricating an organic electro-luminescent display panel, comprising providing a substrate (1) having a front surface and a back surface, forming an organic electroluminescent device layer (12) on the front surface of the substrate, forming a first barrier layer over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer (crevice in U-shaped barrier layer, ¶[0045]), forming a first sealant (3) between the substrate and the first barrier layer so as to encapsulate the organic electro-luminescent device layer between the substrate and the first barrier layer, forming a second barrier layer (6) over the substrate covering the first barrier layer the whole first sealant and the front surface of the substrate and exposing the back surface of the substrate (Fig. 1).

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Regarding claim 16, Furukawa discloses a method wherein the step of forming the second barrier layer comprises performing a deposition process (Π [0131]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. (2000-040586 A).

Regarding claims 4 and 10, Furukawa fails to exemplify the limitations of the first barrier layer has a thickness in a range of about 150-300 μ m, and the second barrier layer has a thickness in a range of about 1-5 μ m. However, it is considered within the capabilities of one skilled in the art the discovery of workable ranges of given to a desirable optimum range, as an obvious matter of design engineering. Moreover, applicant's claimed range does not yield any unexpected results outside the scope of the teachings applied. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to optimize the thickness range of the first and second barrier layers within the claimed ranges, as an obvious matter of design engineering.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. (2000-040586 A) in view of Silvernail et al. (US 6,537,688).

Regarding claim 8, Furukawa fails to exemplify the limitation of the first barrier inorganic material being a nitride selected from the group consisting of aluminum nitride, silicon nitride

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and a combination thereof. However, in the same field of endeavor, Silvernail discloses an organic electroluminescent device layer provided with a first barrier layer (154) of inorganic material, inclusive silicon nitride. It is considered within the capabilities of one skilled in the art to select a material based on its known suitability for an intended application as an obvious matter of design engineering. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the silicon nitride inorganic material disclosed by Silvernail in the device of Furukawa since it is a well known material for the intended purpose of encapsulating and protecting the organic electroluminescent device layer as evidenced by Silvernail's teachings.

Regarding claim 9, Furukawa fails to exemplify the limitation of the second barrier layer is a multiple layer. However, in the same field of endeavor, Silvernail exemplifies the used of a barrier layer composed of a single layer (160, Fig. 3, Column 6, lines 24-25) or a multi-layer laminate (154, Fig. 2, Column 5, lines 41-43), as art recognized equivalent structures provided for protecting and encapsulating a first a barrier layer and organic electroluminescent device layer. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the multi-layered barrier disclosed by Silvernail in the device of Furukawa as an art recognized equivalent used for protecting and encapsulating a first a barrier layer and organic electroluminescent device layer.

Claims 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. (2000-040586 A) in view of Fleming et al. (EP 971564 A2).

Regarding claims 15 and 18, Furukawa discloses the step of disposing the first/second barrier layers over the substrate, wherein the first/second barrier layers are in contact with the first/second sealants, respectively, and curing the first/second sealants so as to encapsulate the organic electro-luminescent device layer between the substrate and the first/second barrier

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layers. Furukawa fails to exemplify the step of forming the first/second sealants on the substrate surrounding the organic electro-luminescent device layer. In the same field of endeavor, Fleming discloses a method of fabricating an organic electroluminescent display panel comprising the steps bonding a barrier layer over the substrate by providing a sealant on the substrate surrounding the organic electro-luminescent device layer, contacting the barrier layer with the sealant and curing the sealant so as to encapsulate the organic electro-luminescent device layer between the substrate and the barrier layer. It is considered within the capabilities of one skilled in the art to use an art recognized sealing technique as an obvious matter of design engineering, in order to provide an airtight seal between the substrate and the barrier layer as evidenced by Fleming. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the sealing steps disclosed by Fleming in the method of Furukawa as an obvious matter of design engineering in order to provide an airtight seal between the substrate and the barrier layer.

Claims 1-7, 10, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishima et al. (JP 2001-068271 A) in view of Park et al. (US 2003/0218422 A1).

Regarding claims 1 and 12, Mishima discloses an organic electro-luminescent display panel (Fig. 2), comprising a substrate (1) having a front surface and a back surface, an organic electroluminescent device layer (3), disposed on the front surface of the substrate, a first barrier layer (6), disposed over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer (spacing between barrier 6 and light emitting element 5), a first sealant (8), disposed between the substrate and the first barrier layer so as to encapsulate the organic electro-luminescent device layer between the substrate and the first barrier layer, and a second barrier layer (water absorbing layer, ¶[0014, 0067]), a cap disposed above the substrate, and a second sealant (9),

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disposed between the cap and the substrate so as to encapsulate the organic electro-luminescent device layer, the first barrier layer and the second barrier layer between the substrate and the cap. Mishima discloses the second barrier layer disposed in the interior surface of the cap ¶[0014, 0067]), instead of being disposed over the substrate covering the first barrier layer, the whole first sealant and the front surface of the substrate and the organic electro-luminescent device layer as claimed. However, in the same field of endeavor, Park discloses an organic electro-luminescent display panel further comprising sealant layer (420) made of hygroscopic material provided at an intermediate spacing between a first barrier layer (440) and a cap element (200), in order to completely fill and seal the intermediate spacing and thus eliminating an additional step of filling the intermediate cavity with an inactive/inert gas (¶[0033]). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to arranged the water absorbing layer as disclosed by Park in the device of Mishima in order to completely fill and seal the intermediate spacing and thus eliminating an additional step of filling the intermediate cavity with an inactive/inert gas. Moreover, in view of the modification of Park, the limitations of the second barrier layer disposed over the substrate covering the first barrier layer, the whole first sealant and the front surface of the substrate and the organic electro-luminescent device layer are further meet.

Regarding claims 2 and 3, Mishima discloses an organic electro-luminescent display panel wherein the first barrier layer is an organic layer, of at least polyester (¶[0041]).

Regarding claims 5-7, Mishima discloses an organic electro-luminescent display panel wherein the first barrier layer is an inorganic layer, of at least an oxide (silica glass, ¶[0041]).

Regarding claims 4 and 10, the combined references to Mishima-Park fail to exemplify the limitations of the first barrier layer has a thickness in a range of about 150-300µm, and the second barrier layer has a thickness in a range of about 1-5µm. However, it is considered within the capabilities of one skilled in the art the discovery of workable ranges of given to a desirable

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optimum range, as an obvious matter of design engineering. Moreover, applicant's claimed range does not yield any unexpected results outside the scope of the teachings applied. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to optimize the thickness range of the first and second barrier layers within the claimed ranges, as an obvious matter of design engineering.

Regarding claims 14 and 17, Mishima discloses a method of fabricating an organic electro-luminescent display panel, comprising providing a substrate (1) having a front surface and a back surface, forming an organic electroluminescent device layer (5) on the front surface of the substrate, forming a first barrier layer (6) over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer (Fig. 2, spacing between barrier layer 6 and light emitting element 5), forming a first sealant (8) between the substrate and the first barrier layer so as to encapsulate the organic electro-luminescent device layer between the substrate and the first barrier layer, forming a second barrier layer (water absorbing layer, ¶[0014, 0067]), and forming a cap (7) over the substrate after the step of forming the second barrier layer. Mishima discloses the step of forming the second barrier layer in the interior surface of the cap ¶[0014, 0067]), instead of forming the second barrier over the substrate covering the first barrier layer, the whole first sealant and the front surface of the substrate and the organic electro-luminescent device layer as claimed. However, in the same field of endeavor, Park discloses an organic electro-luminescent display panel further comprising sealant layer (420) made of hygroscopic material provided at an intermediate spacing between a first barrier layer (440) and a cap element (200), in order to completely fill and seal the intermediate spacing and thus eliminating an additional step of filling the intermediate cavity with an inactive/inert gas (¶[0033]). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to form the water absorbing layer as disclosed by Park in the method of Mishima in order to

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completely fill and seal the intermediate spacing and thus eliminating an additional step of filling the intermediate cavity with an inactive/inert gas. Moreover, in view of the modification of Park, the limitations of the second barrier layer formed over the substrate covering the first barrier layer, the whole first sealant and the front surface of the substrate and the organic electro-luminescent device layer are further meet.

Claims 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishima et al. (JP 2001-068271 A) in view of Park et al. (US 2003/0218422 A1), and further in view of Fleming et al. (EP 971564 A2).

Regarding claims 15 and 18, the combined references to Mishima-Park disclose the steps of disposing the first/second barrier layers over the substrate, wherein the first/second barrier layers are in contact with the first/second sealants, respectively, and curing the first/second sealants so as to encapsulate the organic electro-luminescent device layer between the substrate and the first/second barrier layers. Mishima-Park fail to exemplify the step of forming the first/second sealants on the substrate surrounding the organic electro-luminescent device layer. In the same field of endeavor, Fleming discloses a method of fabricating an organic electroluminescent display panel comprising the steps bonding a barrier layer over the substrate by providing a sealant on the substrate surrounding the organic electro-luminescent device layer, contacting the barrier layer with the sealant and curing the sealant so as to encapsulate the organic electro-luminescent device layer between the substrate and the barrier layer. It is considered within the capabilities of one skilled in the art to use an art recognized sealing technique as an obvious matter of design engineering, in order to provide an airtight seal between the substrate and the barrier layer as evidenced by Fleming. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the sealing steps disclosed by Fleming in the method of Mishima-Park as an

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obvious matter of design engineering in order to provide an airtight seal between the substrate and the barrier layer.

Response to Arguments

Applicant's arguments with respect to claims 1-10 and 12-18 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

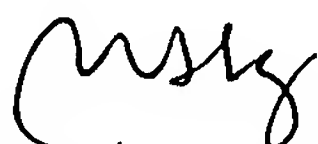
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mariceli Santiago
Primary Examiner
Art Unit 2879